DC-8 Platform Scientist Report

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Takeoff 181209 UTC Sept 12, land 023236 UTC Sept 13

Platform scientists Ed Zipser and Liz Ritchie. Main objective was to do a pattern centered on the expected center location of a circulation that the PREDICT forecast team was convinced would strengthen into a tropical depression and tropical cyclone. The actual weather system did not live up to expectations, as the soundings showed a weak wave-like trough (see attachment). The overriding scientific issue with this system was why it was failing to develop over several days, when all necessary conditions seemed to be present.

The overriding operational issue was to get coordinated legs together with the Global Hawk, which had a similar pattern to ours. There were some difficulties in getting the same flight track, even though we had planned ahead to have proportionately shorter legs for the GH to compensate for their 345 kn TAS compared with the DC8's 450 kn. We did get good coordination on the westbound leg through the apparent center. One of the reasons for the separation was that when a strong convective echo with lightning was on the SSW-NNE leg, the GH deviated right while the DC-8 deviated left. As a result, it took quite a long time to get together after that. There was also good coordination on the last S-N leg through the system. Toward the end of that leg, the DC-8 continued for FLL while the GH broke off toward the SW and was closer to the radar coverage of NOAA 43 for 1-2 legs.

There was rather little deep, organized convection in the system. The only exception was

a small circular area that was NE of the center (the same one that caused the deviation mentioned above) early in the mission. Later in the mission, that band had evolved into a NE-SW orientation and moved westward to a position NW of the center.

All instruments worked well. About 21 dropsondes were released, all providing good data.

DAWN reported success in modifying their retrieval algorithm for winds on this flight.

Attachment	Size
DC8_drop_winds_Sep12.pdf	52.69 KB